ABSTRACT

In order to provide a high-accuracy long-
life hydrodynamic bearing not causing oil film
breakage in bearing clearances and a disc rotation
apparatus using the bearing, when the outside diameter
of the herringbone pattern of dynamic pressure
generation grooves provided on at least one of the
opposed faces of a flange and a thrust plate is
designated as dlo, the inside diameter thereof is
designated as dli and the diameter of the turn-back
part thereof is designated as dlm, the diameter dlm of
the turn-back part is set so as to satisfy the
relationships represented by the following equations:

$$dlm = dsy - (dsy - dli) \times A \text{ and}$$
$$dsy = \{(dli^2 + dlo^2)/2\}^{1/2}$$

wherein A is a value in the range of 0.05 or more to
less than 1.0. In addition, oil or the base oil of
grease to be filled in the hydrodynamic bearing has a
kinematic viscosity of 4 cSt or more at 40°C of
temperature, and one of the outer circumference of a
sleeve 1 and the outer circumference of a shaft 2 is
secured to a base 6 and the other is secured to a hub
rotor 7.